

Interesterification of rapeseed oil catalysed by a low surface area tin (II) oxide heterogeneous catalyst

Authors

Leonardo Interrante, Samir Bensaid, Camilla Galletti, Raffaele Pirone, Benedetto Schiavo, Onofrio Scialdone, Alessandro Galia

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Description

The interesterification of rapeseed oil was performed in a batch reactor using for the first time low surface area massive tin(II) oxide as heterogeneous catalyst and methyl acetate as acyl acceptor. The effect of reaction temperature, methyl acetate to oil molar ratio and catalyst loading on the performances of the process were investigated.

Yields in fatty acid methyl esters (FAMES) and triacetin (TA) up to 90% and 70% respectively, were achieved after 4 h of reaction time at 483 K in the presence of 0.69 mol of SnO per mole of rapeseed oil using a methyl acetate to oil molar ratio of 40.

Quite interestingly, the catalyst performances improved when water was added to the reactions system. Moreover the same catalyst sample was used three consecutive times without observing any depletion of the catalytic activity.

Collected results indicate that SnO is a promising heterogeneous catalyst for the interesterification of ...